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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/359,599	07/23/1999	TAD HOGG	XERX1016MCF/	3028

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EXAMINER

FERRIS III, FRED O

ART UNIT	PAPER NUMBER
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2128

DATE MAILED: 04/07/2004

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/359,599

Applicant(s)

HOGG, TAD

Examiner

Fred Ferris

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 18 February 2004.

2a) ☐ This action is **FINAL**.

2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-27 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-27 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on 23 July 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

4) ☐ Interview Summary (PTO-413) Paper No(s). _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1. *A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7 January 2004 (paper # 9) has been entered. Claims 1-8, 10-17, and 19-26 are currently pending in this case. Applicants have cancelled claims 9, 18 and 27.*

Response to Arguments

2. *Applicant's arguments filed 18 February 2004 (paper # 13) have been fully considered.*

Regarding applicant's response to 35 USC 101 rejection: *The examiner withdraws the 35 USC 101 rejection in view of applicant's amendment to the claims.*

Regarding applicant's response to 35 USC 112(1) rejection: *The examiner withdraws the 35 USC 112(1) rejection in view of applicant's amendment to the claims.*

Regarding applicant's response to 35 USC 103(a) rejection: *The examiner withdraws the 35 USC 103(a) rejection (Malomsoky in view Popovic) in view of applicant's arguments and the amendment to the claims. However, the examiner has now applied new 35 USC 103(a) rejections based on new prior art and the amendment to the claims. Please see new 35 USC 103(a) rejections below.*

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1-8, 10-17, 19-26
3. ***Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,564,197 issued to Sahami et al in view of U.S. Patent 5,895,470 issued to Pirolli et al.*** MAJ

Independent claims 1, 10 and 19 are drawn to:

*Method, computer code, and system for computing diversity measure of web pages by:
Identifying substructures (sets) among elements of web pages (hierarchical structure)
Determining number similar substructures (subsets)
Computing entropy from similar sets*

Regarding independent claims 1, 10, and 19: Sahami discloses a **method**,
computer readable medium, and **system** for computing clustering within a
hierarchical structure by identifying **sets** and related subsets (substructures) of


*groups of elements among **nodes** in a decision tree, and determining an **entropy based influence measure** (diversity) of the groups, and the related distance functions. (Abstract, Summary of the Invention, CL6-L17-40, 57, 64, CL7-L17-35, CL8-L65, CL9-L10, 27, CL12-L40, Figs. 4 – 6, Tab. 1) In step “a” of independent claims 1, 10 and 19 of the claimed invention the substructure terms merely define hierarchy of **web pages**.*

Sahami mentions, but does not explicitly teach a hierarchy of web pages.

*Pirolli discloses a hierarchy of web pages consisting of **sets of substructures** (groups) representing a hierarchical structure and comparing (determining) groups with **similar groups** the hierarchical structure and web page frequency functions. (Abstract, Summary of Invention, Overview, CL6-L3, 36, CL8-L19, 43, CL5-L64-CL10-L47, CL13-L15, Figs. 7-12)*

It would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the teachings of Sahami relating to a method and system for computing clustering within a hierarchical structure by identifying sets and related subsets (substructures) of groups of elements among nodes in a decision tree and determining an entropy based influence measure (diversity) of the groups, with the teachings of Pirolli relating to a hierarchy of web pages consisting of sets of substructures (groups), to realize the claimed invention. An obvious motivation exists since this area of technology is highly competitive with many world-wide-web analysis techniques and products (i.e. web page relevance, influence, etc.) available in the market place and large amounts of money being spent in product development and improvement. (See Introduction: “SONIA: A Service for Organizing Networked

Information Autonomously", M. Sahami, ACM 0-89791-965-3/98/6, ACM 1998 for example) Accordingly, a skilled artisan would have made an effort to become aware of what capabilities had already been developed in the market place and, hence, would have been motivated to modify the teachings of Sahami with the teachings of Pirolli in order to reduce development time and cost.

8 17 26 

Regarding dependent claims 2-8, 11-18, and 20-27: This group of claims simply relates to methods for computing entropy in **measuring diversity** (i.e. web page relevance, influence) and is taught by Sahami as disclosed above. The numbering of element sets, determining similar substructures (groups), distance and frequency functions are also taught by Sahami and Pirolli as disclosed above.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, careful consideration should be given prior to applicant's response to this Office Action.

U.S. Patent 5,703,792 issued to Chapman teaches measuring diversity in combinatorial molecular structures.

"A Library for Visualizing Combinatorial Structures", M. Najork, pp. 164-171, IEEE 1070-2385/94, IEEE 1994 – teaches combinatorial structures.

"The Combinatorial Structure of Fuzzy Functional Dependencies", A. C. Sali, pp. 239-243, IEEE 0-7803-3627-5/97, IEEE May 1997 – teaches combinatorial structures.

"A Combinatorial, Strongly Polynomial-time Algorithm for Minimizing Submodular Functions", S. Iwata, STOC 2000, ACM 1-58133-184-4/00/5, 1999 teaches combinatorial structures.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 703-305-9670 and whose normal working hours are 8:30am to 5:00pm Monday to Friday.

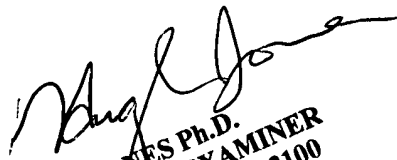
Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 703-305-3900.

The Official Fax Numbers are:

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